

## Description

# Triangular Universal Attachment System

### BACKGROUND OF INVENTION

[0001] 1.Field of the Invention

[0002] The present invention generally relates to an item securing system that is adaptable to hold a variety of items in a secure and user accessible manner within a vehicle. The present invention further relates to an item securing system that allows stored devices to be transferred between several vehicles equipped with the present invention.

[0003] 2.Description of the Related Art

[0004] Consumers are continually seeking more efficient, convenient, versatile and secure ways to transport or store contents which are stowed or utilized in a motor vehicle such as a van, minivan, and passenger sedan and sport utility vehicle. Conventional methods of stowing items within the vehicle have been trunk space, the floor of the vehicle, the area behind the seats, and pre-formed brackets such as cup holders, change holders, and the like.

[0005] For example, U.S. Patent Number 4,418,733 issued December 6, 1983 to Kallman teaches the use of hook and loop materials for attaching receptacles such as beverage holders, pouches and the like to a surface on or in a vehicle.

[0006] U.S. Patent Number 4,708,549 issued November 24, 1987 to Jensen teaches a bolt down anchor fitting for use in tracks in vehicles and aircraft for example where heavy loads such as cargo containers and passenger occupied seating must be secured and not be prone to vibration loosening.

[0007] U.S. Patent Number 5,139,375 issued August 18, 1992 to Franchuk teaches a bolt down bar rail system allowing for mounting of tie-downs, racks and other devices to the open bed of a truck.

[0008] U.S. Patent Number 5,255,832 issued October 26, 1993 to Christensen teaches a rail mounting system for use in truck beds to allow for mounting equipment such as tool boxes.

[0009] U.S. Patent Number 5,642,845 issued July 1, 1997 to Van Kooten teaches a permanently mounted tool box locking device for use in truck beds.

[0010] U.S. Patent Number 5,653,366 issued August 5, 1997 to

Liserre teaches a mounting means for mounting a security box to the floor of a vehicle.

[0011] U.S. Patent Number 5,730,346 issued March 24, 1998 to Adams et al teaches a strap and mounting block assembly to allow the attaching of cargo alongside a vehicle or building. The assembly requires the use of mounting brackets being permanently attached to the building or vehicle.

[0012] U.S. Patent Number 5,769,294 issued June 23, 1998 to Heinz et al teaches a recessed accessory hook for use on the interior of a vehicle.

[0013] U.S. Patent Number 6,349,865 issued February 26, 2002 to Tolley et al teaches a collapsible pouch-like storage container for securing objects in the bed of a truck. The storage container is fixedly attached to the truck bed.

[0014] U.S. Patent Number 6,547,117 issued April 15, 2003 to Glovatsky et al teaches a beverage container holder for use in vehicles that utilizes a sensor and continuous moldline technology which changes shape to grip a container placed in the holder.

[0015] U.S. Patent Number 6,550,654 issued April 22, 2003 to Crago teaches a removable cargo net for use in a vehicle which utilizes a permanently mounted frame member to

receive and hold net retainers located around the periphery of the net.

[0016] U.S. Patent Application Publication Number 2001/0054632 published December 27, 2001 to Larsen et al teaches an apparatus that can be clamped to the floor attachments of a motor vehicle used to secure removable seats. The securing of the apparatus to the floor attachments is accomplished by pincers that lock around the floor attachment bars.

[0017] With consumer spending more time in their vehicles than ever-before, the tendency or need to have personal items in the vehicle is more prevalent. For example, more drivers and passengers carry mobile phones, coffee mugs, CDs and DVDs in their vehicles. However, storage and secure retention of such items has routinely been a concern for consumers. In addition, there is an ever-growing concern about leaving such devices as well as PDAs and the like in open view when the vehicle is not occupied.

[0018] Accordingly, there is a need for a attachment and storage system for such items that provides secure safe storage while allowing use of the secured devices by drivers and passengers while occupying the vehicle.

[0019] DISCLOSURE OF THE INVENTION

[0020] The present invention provides advantages and alternatives over the prior art by providing a universal, in-vehicle attachment system comprising at least one open cavity wherein any item equipped with at least one complimentary prong can be inserted, providing a secure and easy fastening attachment device. The present invention may be designed to secure devices and items in place within the vehicle such as, for example, cellular phones, CDs or DVDs, bottles, mugs, cups, coolers, bike racks, and PDAs. Further the storage or securing device can be molded to conform directly to the size and shape of the particular object or, alternatively, a more generic type receptacle can be used to secure such items.

[0021] According to a further aspect of the present invention, there is provided an in-vehicle attachment system designed and incorporated into the vehicle, with multiple locations, including the seat back panel, instrument panel, door panel, quarter panel, floor panel, or other interior surface. Additionally, the storage units may be transferred between vehicles having the in-vehicle attachment system of the present invention without vehicle specific storage containers.

[0022] According to yet another aspect of the present invention

there is provided a device mounting apparatus suitable for mounting items in a vehicle comprising in cooperative combination: a universal mounting unit mounted in an interior panel or floor of a vehicle having located therein at least one mounting cavity; a storage receptacle having located thereon at least one prong suitable for inserting into said at least one mounting cavity; thereby allowing the mounting of a desired device in a vehicle.

[0023] The present invention thus advantageously provides a universal device attachment and storage system that is easy to use, cost effective and in which the storage units themselves may be used in multiple vehicles without special adapters or modifications.

#### **BRIEF DESCRIPTION OF DRAWINGS**

[0024] Figure 1 shows a bottom perspective view of one embodiment of the triangular portion of the universal attachment system of the present invention.

[0025] Figure 2 shows a top perspective view of one embodiment of the triangular portion of the universal attachment system of the present invention.

[0026] Figure 3 shows a partial perspective view of one embodiment of the attachment system of the present invention mounted in an interior panel of a vehicle with the plane

side showing.

[0027] Figure 4 show a partial perspective view of one embodiment of the attachment system of the present invention mounted in an interior panel of a vehicle with the slot side showing and ready for use.

[0028] Figure 5 shows a partial perspective view of one embodiment of the attachment system of the present invention mounted in an interior panel of a vehicle with the hook side showing and ready for use.

[0029] Figure 6 shows a perspective view of one embodiment of a storage receptacle of the present invention.

[0030] Figure 7 show a bottom perspective view of another embodiment of the triangular portion of the universal attachment system of the present invention.

#### **DETAILED DESCRIPTION**

[0031] Reference will now be made to the drawings, wherein to the extent possible like reference numerals are utilized to designate like components throughout the various views. Referring to Figure 1, there is presented a bottom perspective view of a preferred embodiment of the triangular universal mount unit 10 of the present invention comprising a triangular universal mount unit 10, preferably formed of a molded plastic, and having a closed position

side 1 (Figure 2), an open use position side 2 having a mounting section 3 containing at least one vertical mounting cavity 4 therein, and a second open use position side 5 having a hook unit 6, an open face 7 and a closed face 8 (Figure 2).

[0032] As further shown in Figure 1 there is shown the open face 7 and a mounting device retaining sleeve 9 and having a bore 11 therein, both being dimensioned for receiving and retaining a mounting device (not shown). Suitable mounting devices include, for example, pins, screws, and rivets and are well known in the art.

[0033] Figure 2 presents a top perspective view of the embodiment of the triangular universal mount unit 10 shown in Figure 1 having a closed position side 1, an open use position side 2 having a mounting section 3 containing at least one vertical mounting cavity 4 therein, and a second open use position side 5 having a hook unit 6, and open face 7 (Figure) and a closed face 8 having located therein a bore 11.

[0034] The in-vehicle attachment system of the present invention may be incorporated into the vehicle, with multiple locations, including the seat back panel, instrument panel, door panel, quarter panel, floor panel, and other interior



surfaces Referring now to Figures 3, 4 and 5, there is shown one preferred embodiment of the present invention where the triangular universal mounting unit 10 open use position sides 2 and 5 may be hidden in a closed position, with closed position side 1 exposed, when not in use to prevent the present invention from interfering with other objects in the vehicle or with occupants when the mounting sides 2 and 5 of the triangular universal mounting unit 10 are not in use.

[0035] More particularly Figure 3 shows a partial perspective view of a vehicle interior panel 20 having a triangular universal mounting unit 10 mounted in a interior panel cavity 21 showing only the triangular universal mounting unit 10 closed side 1.

[0036] Figure 4 show a partial perspective view of a vehicle interior panel 20 having a mounting cavity 21 with triangular universal mounting unit 10 mounted therein where the open use position side 2 having a mounting section 3 containing vertical mounting cavity 4 is in the fully open use position.

[0037] In Figure 5 there is shown a partial perspective view of a vehicle interior panel 20 with triangular universal mounting unit 10 mounted therein where the open use position

side 5 having a hook 6 is in the fully open use position.

[0038] In Figure 6 there is shown a perspective view of one embodiment of a mounting unit of the present invention having a storage receptacle 30 having a device storage side 31 and a mounting side 32, said mounting side 32 having at least one corresponding mounting prongs 33 of a desired shape and size to be received and held by the at least one complimentary vertical mounting cavities 4 (Figures 1, 2, 4). The storage receptacle 30 may have storage side 31 with any desired shape and size to accommodate a variety of occupant devices such as cell phones, beverage containers, CDs and DVDs for example. The in-vehicle attachment system of the present invention may be incorporated into the vehicle, with multiple locations, including the seat back panel, instrument panel, door panel, quarter panel, floor panel, or other interior surfaces.

[0039] Finally in Figure 7 there is shown a bottom perspective view of a preferred embodiment the present invention comprising a triangular universal mount unit 10, preferably formed of a molded plastic, and having a closed position side 1 (Figure 2), an open use position side 12 having a mounting loop section 13 suitable for attaching an

elastic cord, and a second open use position side 5 having a hook unit 6, an open face 7 and a closed face 8 (Figure 2).

[0040] It is to be understood that reference to storage receptacle 30 throughout the specification is meant to encompass brackets for mounting items such as, for example, cell phone mounts and CD player mounts; items with the mounting prong 33 as part of their design such as, for example, flash lights; and containers to hold items and articles such as, for example, ice chests, toolboxes, CD bins and the like.

[0041] It is also to be understood that the use of the terms "panel" and "floor" is used to encompass not only those specific areas of the interior of a vehicle but in fact any surface capable of having the present invention mounted within it and able to have a concealed closed position therein.

[0042] The triangular universal mounting unit 10 and the storage receptacle 5 may be made from any suitable material well known in the art. Preferred materials are polypropylene, reinforced polypropylene, ABS, polycarbonate, polycarbonate/ABS, nylon, and polyacetal. It is to be further understood that the triangular universal mounting unit 10

and the storage receptacle 5 may be made from the same or different materials suitable for the particular application. For example the triangular universal mounting unit 10 may be made from metals such as, for example, aluminum, steel, and other metals to provide greater strength for applications that may require it.

[0043] Although the preferred embodiments of the present invention has been disclosed, various changes and modifications may be made without departing from the scope of the invention as set forth in the appended claims.